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Descriptors-*Architectural Programing, Audiovisual Aids, Building Design, Classrooms, Closed Circuit Television, Controlled Environment, *Exceptional Child Research, Flexible Facilities, *Institutional Facilities, *Mentally Handicapped, Movable Partitions, Professional Education, Rehabilitation Programs, Space Utilization

To investigate the appropriate design and utilization of physical facilities being constructed as a rehabilitation center, a variety of centers was examined. Conclusions were that flexibility in construction of the physical plant, including nonpermanent walls and fixtures was necessary; program planning should be included in architectural discussions to avoid later modifications; facilities should be designed with the concept of a teaching hospital in mind; equipment and materials for program development, especially technical aids and audiovisual facilities, should be acquired on an experimental basis; design must be based on changing community needs; and the service, research, professional training, and demonstration areas should overlap and flow into and out of each other. Consideration was given to the role of the staff and the kinds of areas they would need, classrooms for training programs, a television studio and control room, advanced planning for installation of audiovisual equipment, varied use of the same space, and facilities for behavior modification training. (Author/RP) ---------

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FINAL PROJECT REPORT

The Utilization and Design of Physical Facilities for the Rehabilitation of Mentally Retarded

VRA Grant RD-1319-G-64

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ABSTRACT

In 1963, Parsons State Hospital and Training Center received a grant from the Vocational Rehabilitation Administration (RD-1319-G-64) to investigate the appropriate design and utilization of the physical facilities which were being constructed for the development of a new rehabilitation center. The objectives of this investigation were: (1) to determine the most effective use of the new facilities and personnel in a multidisciplinary rehabilitation center; (2) to develop the most effective methods and techniques for training rehabilitation personnel; (3) to develop, within a rehabilitation frame of reference, an applied research and professional training and demonstration facility; and (4) to determine the most effective means of coordinating these functions to produce the optimum use of the facilities and staff, while minimizing the interference and conflicts of interest between these special rehabilitation programs, the more standard service programs of the hospital, the professional training programs, and the research programs.

After exploring a variety of professional settings and rehabilitation centers, and after consultation with leaders in various aspects of the field, including both individuals professional in mental retardation and technicians professional in the area of construction, television, etc., the investigation concluded the following: First, the development of new facilities and materials should be flexible, and, wherever possible, program planning should be included in architectural discussions, so that expensive later modifications can be avoided. Second, residential institutions should assume a major professional training responsibility, and physical facilities should be designed with the concept of a "teaching hospital" in mind. Third, all equipment and materials planned for program development and expansion should be acquired on an experimental basis, with major emphasis on technical aids such as closed-circuit television and other audio-visual facilities. Fourth, hospital design must be based on changing community needs, and programs should be planned in terms of community interaction and transition. Fifth, the service, research, professional training and demonstration areas of a complex rehabilitation facility must be permitted to overlap and flow in and out of each other to produce a unified, multidisciplinary push on the problems to be solved.

The results of the investigation lead to overall conclusions that this type of grant is very valuable for developing plans for the most economic and efficient use of new facilities and the staff which will be working in them. The outstanding conclusion is that this type of support and planning should both precede and accompany all other planning related to the development of new facilities, the renovation of old facilities, or any other modifications in buildings and space leading to development of an appropriate rehabilitation center.

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The Utilization and Design of Physical Facilities for the Rehabilitation of Mentally Retarded

VRA Grant RD-1319-G-64

INTRODUCTION

In 1963, Parsons State Hospital and Training Center, Parsons, Kansas, completed the first phase of a two-phase rehabilitation complex. At that time, the second phase had already advanced into its final planning stage and the overall improvement of a rehabilitation program, insofar as it included facilities, buildings, etc., had developed greatly. One of the major obstacles to effective rehabilitation planning for the mentally retarded involved the lack of specifically designed facilities; therefore, while certain aspects of the total program already had been developed by 1963, the evolution of many of the suggested areas for progressive rehabilitation programs was dependent, to some extent, on the availability of facilities.

BACKGROUND

We discovered, early in this development stage, that most of the available information centered around post hoc solutions to difficulties which had evolved in earlier periods. This method, in as rapidly moving a field as mental retardation, often meant that we were constantly planning for the solutions to yesterday's problems, while relatively less effort was given toward dealing with today's problems and almost no effort was put into planning for tomorrow. The staff at Parsons State Hospital and Training Center felt that a brand-new rehabilitation facility such as ours should center its planning around the long-range use to which the buildings and materials were to be assigned and to the kinds of problems we expected to arise in the future.

Therefore, we requested support from the Vocational Rehabilitation Administration to plan for the proper utilization and design of physical facilities for the rehabilitation of the mentally retarded. We proposed to visit selected progressive rehabilitation programs for the purpose of observing the techniques and facilities they were using. We hoped, thus, to make ourselves aware of the best efforts in this field from various sections of the country. We hoped also to be able to profit by previous mistakes and to minimize duplication of effort; therefore, we were particularly interested in examining multidisciplinary, multifaceted, multi-oriented programs of rehabilitation. We particularly wanted to observe vocational rehabilitation programs which were integrated with other problems of community transition, e.g., the use of leisure time, family planning, etc. We also were interested in programs which emphasized professional training. We were interested in observing new training techniques, particularly those using closed-circuit television and other audio-visual processes. And, finally, we wanted to observe how such programing might be integrated into other areas of mental retardation planning, such as special education, prevocational education, sheltered workshops, etc.

We also proposed to bring into Parsons outstanding professional people in the field of rehabilitation and training to consult with us and to help us through the exchange of new information which could be used in improving the various treatment and training functions of the center.

SETTING

Parsons State Hospital and Training Center is a facility for children and young adults (ages 6 to 21) who are mentally retarded, brain damaged,

and/or emotionally disturbed. The hospital was awarded the American Psychiatric Association, Mental Hospital Services Achievement Award in 1954.

The hospital's staff numbers over 450 employees. The following professional departments and disciplines are represented: psychiatry, medicine, pediatrics, nursing service, neurology, psychology, research, social service, speech pathology and audiology, and adjunctive therapies. The department of adjunctive therapies consists of special education, occupational therapy, music therapy, recreational therapy, library, religious education, vocational counseling, and prevocational and vocational training.

A new $1,350,000 rehabilitation center has been constructed. The complex of buildings which makes up the rehabilitation center provides new facilities for: recreational therapy, special education, music therapy, occupational therapy, patient library, speech pathology and audiology, vocational guidance, volunteer services, clinical psychology, audio-visual center, and a center for professional training and demonstration. In addition, existing rehabilitation facilities include a gymnasium, an indoor swimming pool, a 400-seat auditorium, a patient canteen, a closed-circuit television studio, and administrative offices.

The hospital has built twelve modern, air-conditioned, 32-bed cottages, completely replacing the original structures built in 1900. A new laundry, an administration building, and a new food service unit have all been completed. All major roads have been paved, and the complete institutional grounds have been lighted. A new research building and additional short-term employee and student housing units have been started.

Special facilities, in addition to those available in the rehabilitation center, include a prevocational workshop and education building

(woodworking shop, paint shop, and auto mechanics shop with additional classrooms), a large available area for additional classrooms and shops, a sheltered workshop, and a special demonstration cottage (MR-1 801-A66).

The hospital currently participates in 14 areas of research, professional training and demonstration, as follows:

PHS MR1 801 A66	Intensive Training of Institutionalized Mentally Retarded Girls
PHS MR1 805 A67	Student Work Program in MR
NIMH 1 R11 MH01862	Demonstrating Adaptive Behavior
NIMH 1 R11 MH01731	Community Transitional Adjustment Program
NIMH MH8573	Expanded Training in Music Therapy
NIMH MH8793	Inservice Training of Patient-Care Personnel
NICHHD 00870	Research in Communication Disorders
NINDB 2 T1 NB5362-03A1	Research Training in Communication Disorders
NIMH MH8262	Research Training in Mental Retardation
NIMH 1 R11 MH01127-01A1	Demonstration of Therapy for Retardates with Communication Disorders
VRA 556-T-65	Teaching Grant in Mental Retardation
NICHHD 1 J03 FR HD-00194-91	Center for Research in Human Development
DRF-WI-22-6	Workshop Improvement Grant
67105	Project in Special Education (Trainable)

Of these, only three were held by the hospital at the time this application was made. These three were all concerned with communication disorders. All of the other research, training and demonstration areas listed above have been acquired since the investigations supported by this facilities utilization project.

Special note should be made of the "Center for Research in Human Development" grant. This is a new program for the building of research facilities at The University of Kansas in Lawrence, The University of Kansas Medical Center in Kansas City, and Parsons State Hospital and Training Center so that a combined research center can be maintained to further research in all areas of mental retardation. Further, there is presently in process a request for a university-affiliated training grant, also to include the three campuses, to provide a combined research and

professional training center. Both the present center, which was granted in January, 1966, and this proposed combined center grew out of the training and research needs which were made evident by our investigations throughout the country. The long-range possibilities of these programs, for both the State of Kansas and mental retardation in general, represent some of the most exciting and stimulating potential results from the investigations supported by RD-1319.

OBJECTIVES

Our specific objectives were fourfold: (1) to determine the most effective use of the new facilities and personnel in a multidisciplinary rehabilitation center; (2) to develop the most effective methods and techniques for training rehabilitation personnel; (3) to develop, within a rehabilitation frame of reference, an applied research and professional training and demonstration facility; and (4) to determine the most effective means of coordinating these functions to produce the optimum use of the facilities and staff, while minimizing the interference and conflicts of interest between these special rehabilitation programs, the more standard service programs of the hospital, the professional training programs, and the research programs (all of which were rapidly developing and most of which would be operating at the same time, often under the same roof). This latter objective also had to take into consideration the large variety of professional disciplines represented on the hospital staff.

PROCEDURE

This request was granted by VRA (RD-1319), and an amount in excess of $9,000 was awarded to help us meet our stated objectives. This grant was renewed once without additional funds in 1964, and again without

additional funds in 1965; therefore, the full grant ran from September 1, 1963, through August 31, 1966. The extensions were due, first, to a delay in the completion of the second phase of the rehabilitation center, and, second, to a new planning growing out of the use of the grant funds to bring in consultants, etc., which brought about shifts in programing and philosophical orientation. Most of these shifts centered around the realization that residential institutions had to play a new kind of role in relationship to the broad range of services required for the mentally retarded. It was recognized that isolated, self-contained care centers would no longer serve the needs in this area. We questioned whether such centers actually ever did serve the needs, but in terms of looking toward the future, it was recognized that certainly no newly planned program should continue to contain those elements. Rather, a program had to be developed which took into consideration that there were essentially three levels of service and that the hospital has a responsibility and role at each level. First, at the local level, where the retarded individual was seen originally by individuals often not professional in the field of mental retardation, the hospital has a major role of providing consultation, advice, and at times indirect services through the function of an "umbrella" over ongoing programs. Second, at the level of the comprehensive or expanded community mental retardation center, the hospital has a major responsibility in helping to insure the success of such services, to aid in staffing, consultation, research, etc., and, in terms of the hospital itself, may, in some areas, actually become such a center on an outpatient basis, providing certain types of day care, or intermediate treatment, and short-term therapy and training, without having to provide the "hotel services." Third, the

residential institution itself has the responsibility of taking those mentally retarded individuals for whom no other services can provide appropriate treatment or training. This latter category includes essentially all those individuals about whom there is not sufficient knowledge for either the local or comprehensive services to provide an adequate rehabilitation plan.

The philosophical orientation which grew out of the understanding of the needs, from this frame of reference, is associated primarily with the concept of the development of programs based on the adaptive and developmental processes within the individuals, and, thus, the rehabilitation program, and the facilities in which these programs were developed, should all be oriented toward the movement of the retarded individual through the hospital. Since the overwhelming number of mentally retarded individuals are not in need of institutionalization, the hospitalized patient is usually an individual who has been admitted because of impairment in adaptive behavior. If, through appropriate treatment and training programs, this impairment can be modified, the individuals should then leave the institution and the old notion of a lifetime of hospitalization will have to be abandoned as both destructive of the human being and as uneconomic.

As the result of these investigations, it was further decided that the best way to provide this kind of program was through the expansion of research, professional training and demonstration facilities to support and sustain the service program. We will discuss this aspect of the question further in the RESULTS section of this report.

Thus, we discovered, as a result of using this type of investigatory approach and by acquainting ourselves with a large variety of ongoing

programs, that many of our original plans were already outmoded and that a variety of shifts were required if we were to complete our major objective of using the new facilities in the most economic manner while, at the same time, developing a long-range rehabilitation orientation which would be of service in the years to come.

In all, some 43 centers, programs and individuals were involved in the planning and investigations carried out under this grant. The majority of these included on-the-spot visits to active rehabilitation programs, with a major emphasis on those using different types of equipment, particularly those experimenting with audio-visual and television techniques. As might be expected, the centers visited could be divided into those that were making major modifications in their program and facilities, and those that were trying to force their existing physical and personnel organization into new molds. We tried to take the best from both patterns, since we had to cope with both situations. One of the outstanding points to emerge had to do with the actual construction of the physical plant. Here, it was found that, above all else, it had to be flexible. Flexibility was necessary in all aspects of the construction, even to the extent that, wherever possible, nonpermanent walls and fixtures should be installed. While the outer frames of buildings might have a permanent identity, the most useful facilities were those where the internal organization of the building was such that it could be modified as new needs developed. This is particularly true of school facilities and training areas.

We also found that the requirements of closed-circuit television needed a complete reorganization and that much of the early planning we had devoted to this area had to be revamped. Many of these on-the-site

visits were devoted to becoming fully acquainted with the needs of an audio-visual facility that would become an integral part of the research, training and demonstration program for the type of hospital we envisioned. One of the major things we learned was that much of this should be planned before the first brick was laid, and we were able to profit from this knowledge before completing our building program.

RESULTS

The general findings of this investigation will be discussed in terms of the four major objectives outlined previously. Before going into that discussion, however, we can best summarize these results by underlining five major findings: First, the development of new facilities and materials should be flexible, and, wherever possible, program planning should be included in architectural discussions, so that expensive later modifications can be avoided. Second, residential institutions should assume a major professional training responsibility, and physical facilities should be designed with the concept of a "teaching hospital" in mind. Third, all equipment and materials planned for program development and expansion should be acquired on an experimental basis, with major emphasis on technical aids such as closed-circuit television and other audio-visual facilities. Fourth, hospital design must be based on changing community needs, and programs should be planned in terms of community interaction and transition. Fifth, the service, research, professional training and demonstration areas of a complex rehabilitation facility must be permitted to overlap and flow in and out of each other to produce a unified, multidisciplinary push on the problems to be solved.

These results were derived from an analysis of the findings of our investigation around the four original objectives of the program. Since

this was not a research investigation, these findings will be reported in anecdotal and subjective form rather than as an exposition of data; however, where specific information supports the findings, it will be presented.

The first objective was to determine the most effective use of the new facilities and personnel in a multidisciplinary rehabilitation center. In a sense, this objective was the whole purpose of the request for a grant. That is, a new rehabilitation center was being developed, and the investigators were interested in making sure that the buildings and the personnel were used appropriately. The first problem to be dealt with was how we anticipated using the new space. This was a problem both in terms of staff ratios and in terms of program modifications. These are obviously not two separate areas, but two parts of the single question of rehabilitation planning. Questions concerning who is going to do the work and what kind of work they are going to do are both important aspects of the broader question, "in what kind of area do they need to work?" The question of "who" is very closely related to the availability of members of the helping disciplines who have been appropriately trained, are qualified to work with the mentally retarded, and are willing to serve in a residential institution that is relatively isolated from the main stream of urban affairs and city living. Problems relating to salaries, status, civil service, etc., were postponed in favor of the core problem of availability. Thus, it was found that hospitals of this sort typically have many vacant positions. They are constantly complaining about recruitment difficulties, raiding from better-financed organizations, and are quite prone to use the poor staff-patient ratio as a major reason for failure in many program areas. We certainly had no quarrel with this information, but realizing that this

problem was nationwide, we found it was necessary to approach the solution from a different frame of reference. If the available pool of professional individuals could not provide sufficient staff for the nation's hospitals and residential institutions, then both the pool and the level of professionality had to be reexamined. The major solution which we derived from this investigation was the development of an extensive student training program, aimed at both improving the training in mental retardation normally provided by the state's colleges and universities and, at the same time, providing additional staff resources to the hospital through the use of pre-professional trainees.

Student Training

This did not require a breaking down of the "training before service" dictum, as the students were not brought into training as a substitute for regular staff. Rather, it was found that by having student training programs it was possible to recruit highly qualified professionals into staff positions to train the students. This became a job enrichment program, permitting service personnel to vary their daily activities and enrich their own professional life through interaction with the trainees and the faculties of the colleges with which the students were affiliated. This also served as a staff expansion and recruitment program, as many of the students were later hired for full staff positions after they had completed their degree and certification requirements. The student trainees, therefore, were still able to put their training needs first, but since these were practicum programs, the training was done through directed activity with retarded individuals and served, at the same time, a rehabilitation function, since one of the primary needs of mentally retarded children is an increased one-to-one contact.

Three different types of college-affiliated student training programs were developed. One, a practicum program to permit the student to complete field experience requirements leading to registration or certification in accordance with the requirements of the certifying agency. These students would stay in the program for a varying length of time, depending on their professional needs, and would be given training in the areas specified by the registration requirements.

Two, a program providing specific course work as part of the requirements for advanced degrees. Courses taught as part of a curriculum leading usually to a Master of Arts or Master of Science degree include, in addition to the practicum training: Adaptive Behavior; Play Therapy with the Mentally Retarded; Research Methods; Research Statistics; Rorschach with the Mentally Retarded; and a variety of Special Problem and Readings courses.

Three, specific programs aimed at the development of mental retardation specialists in a number of disciplines were organized. Here, the student could complete a full internship (as in Clinical Psychology), a number of semesters' work as an integral part of his degree (as in Music Therapy, MH8573), or as an adjunct to training in another field (as in Research Training in Mental Retardation, MH8262).

Since many of the students were in graduate programs, and since the interaction with the hospital was considered valuable in developing and upgrading these disciplines in the area of mental retardation, an intensive research program was also instituted. The student trainees were given help in preparing theses and dissertations, and major areas of basic research, in conjunction with the University of Kansas Bureau of Child Research, were developed. We will discuss more in this area later.

The new facilities were planned to include space for students. Equipment and materials were provided so that the student training program could progress. Many additional aids that would help permit closer interaction between the students and the staff-professors were also developed, e.g., conference rooms, library, seminar and classroom space, etc.

Since this investigation was started, over 50 individuals have gone through this program and have graduated with either a master's degree or a specialist certificate in their discipline; an additional eight individuals have completed their internship leading to a doctor's degree, and six other individuals have also completed internships and are currently candidates for a doctor's degree.

The second major objective was to develop the most effective methods and techniques for training rehabilitation personnel. This objective is obviously very closely tied to the first objective and can be considered a discussion of procedures related to the completion of the first objective. As stated above, one of the elements which emerged from our contacts with other agencies, consultants, and ongoing programs was that salaries and staffing patterns have not been able to keep pace with the needs of the patient population. Many institutions are not able to function as efficiently as their improved knowledge of rehabilitation processes would permit, because they do not have sufficient staff or are not able to pay sufficient salaries to bring in properly qualified people. This situation is made increasingly difficult as new programs develop and competition for the few really qualified professionals sharpens. These factors, plus the ever-increasing fact that more and more difficult types of patients are being institutionalized, has made appropriate use of even the most modern

facilities very complicated. The solution was the development of a "teaching hospital."

Teaching Hospital

The concept of a teaching hospital is not a new one. It has been utilized by medical facilities for years as a means of organizing hospital services into a generalized training function. Residential settings have not often utilized this concept, and in the area of mental retardation it has rarely existed at all. However, we have found that this approach is very practical and useful. This is true not only for the reasons stated above, but also because the new type of patient population requires a different type of hospital staff. Since the treatment and training program, by definition, has to be experimental in nature, the ability to experiment, to be able to try new ideas and occasionally fail, must also be considered when staffing such a rehabilitation center. It was discovered that it would be almost impossible to staff our center properly if the more typical service orientation was retained, since the type of patient we are discussing presents needs for which previous professional training or experience is not available. The teaching hospital makes it possible to bring together a large number of highly specialized professional individuals whose main responsibilities are student training and professional advancement through research and demonstration projects.

In addition, these same "professors" also assume responsibility for inservice training and staff advancement of regular staff, and the whole program is able to move forward at a more rapid pace. Here, again, classroom facilities had to be planned into the new physical plant, and professional curriculum was organized around the premise that it is as easy to

lecture to 30 people as it is to three, and, therefore, the inservice training and student training programs could be combined and integrated where the subject matter was similar.

Further, to make this effective, affiliations were established with colleges and universities both in the State of Kansas and in neighboring states. Kansas State College of Pittsburg, Kansas State Teachers College at Emporia, and Fort Hays Kansas State College provide practicum trainees in special education, speech and hearing, school psychology, recreation therapy, art therapy, and counseling and guidance. The University of Kansas, Oklahoma State University, Missouri University, and the University of Kansas Medical Center provide interns and practicum trainees in clinical psychology, general psychology, educational psychology, sociology, social work, child development, music therapy, occupational therapy, and candidates for specialized training in mental retardation research from a variety of disciplines. Most of the work done in these areas at Parsons State Hospital and Training Center under this teaching hospital structure is considered "on campus," and the staff instructors hold dual appointments between the hospital and the colleges.

Audio-Visual and TV

One of the major new facilities, alongside the professional training, research and demonstration programs, which was found necessary for the achievement of this objective, was the development and use of audio-visual aids and closed-circuit television.

It was found, through the investigations supported by the facilities utilization grant, that television was one of the most important training aids to be developed in rehabilitation planning. The planning and

preparation in this area led directly to the development of a "Teaching Grant in Mental Retardation" (VRA 556-T-65). This grant provided a training project that could use the closed-circuit television facilities at Parsons State Hospital and Training Center to develop training films to illustrate training materials, methods, and/or techniques and curricula that have proven effective in the rehabilitation of the mentally retarded. These films will serve as teaching aids for critical rehabilitation areas, e.g., prevocational education, training in independent functioning, training in adaptive behavior, etc. They will lead to the development of a more useful rationale for the production of training films in other settings, and they will permit the collection of data on the use of this type of technique to increase the professional competency of vocational rehabilitation counselors, vocational guidance personnel, special educators, teachers, psychologists, and others in professions and disciplines working with the mentally retarded.

Much of this program evolved directly from the planning done by staff members and consultants at the hospital, using funds made available by the planning study supported by VRA (RD-1319). Through this investigation, Parsons State Hospital and Training Center, realizing the advantages of closed-circuit TV, began incorporating the necessary architectural modifications into the planning of the five buildings of its rehabilitation complex. All of these buildings have been planned, designed, and electrically wired to maximize the use of the closed-circuit television system.

As a part of the program of improving television facilities, it was realized that a television installation is greatly enhanced by providing a studio from which most of the programing originates. First, the studio

permits adequate lighting at a small cost, while the remote type of operation has to rely either upon the available lighting or upon portable lighting, which can never be as satisfactory. Second, the studio operation reduces the possibility of damage to equipment caused by the necessary moving of equipment for remote location functions. Third, the overall quality of studio productions is improved in comparison with remote location productions. Therefore, a 25' x 40' studio was built, providing the expected improvement in quality as the result of the above and other related factors.

As standard equipment within the studio, studio-type tripod-mounted Dage cameras are used for this area only. In addition, two self-contained cart-mounted cameras are stored in the studio and are available for remote use. The studio itself has an acoustically treated ceiling with light sources available which will provide more than 300 footcandles in any desired area. The studio also is equipped with such standard accessories as scenery props, monitors, microphones, microphone booms, and additional camera lenses for the necessary interchanges.

Directly in conjunction with the TV studio is the TV control room, from which a wide window permits complete viewing of the operations in the entire studio. The equipment provided in the control room includes a Dage video control console, which includes a standard type switcher-fader for video control. The switcher-fader permits simultaneous operation of up to six cameras at one time, although normally only two or three cameras are in use for any one production. Other equipment in the control room includes a Sony portable video tape recorder, two Ampex audio tape recorders, three camera monitors, and one master monitor.

There are remote locations set into all of the existing buildings of the new rehabilitation complex, and additional remote locations have been

provided for in other buildings of the Training Center. The hospital has a 400-seat auditorium equipped with four monitors to provide viewing facilities for large conferences, classes of students, etc., and a conference room with a large monitor to provide viewing for smaller groups in a more rigorous teaching setting.

Since any closed-circuit television operation requires regular maintenance, calibration, and servicing, an electronics-repair workshop is also located within the rehabilitation complex. The present maintenance equipment includes such standard accessories as a tube tester, voltohmmeter, VTVM, oscilloscope, audio signal generator, signal tracer, and the necessary electrical hand tools. The addition of more calibration and maintenance equipment is being contemplated as the program grows.

The closed-circuit television system at Parsons State Hospital and Training Center has been planned through consultations with other installations which have been in operation for several years, consultation with commercial television engineers, and many contacts with closed-circuit television equipment suppliers by various hospital staff members with previous television experience. The present arrangement permits a studio type of function which has been patterned directly from commercial installations and, through the use of training films, provides the means of communicating with other settings.

The important element which evolved from the investigation supported by this grant in relationship to physical facilities was that these kinds of plans cannot be an afterthought; the buildings must be wired for the use of audio-visual equipment, appropriate lighting must be installed, space for audio-visual equipment must be provided for in classrooms, conference rooms,

etc., and additional materials and equipment to make the training and research objectives feasible must be available.

The third objective was to develop within a rehabilitation frame of reference an applied research and professional training and demonstration facility. This objective was the natural outgrowth of the development of the kind of rehabilitation center we have described. Our consultations and visits demonstrated to us that the most successful programs were those which permitted all aspects of a program to be centered on the specific problem to be solved. However, as we have discussed, if we were to meet the needs of expanding the rehabilitation program and improving the level of the staff, it was necessary to develop extensive research, professional training and demonstration activities. These two concepts at first seemed to be in contradiction. However, this contradiction between the needs for freedom of research, the needs for putting training ahead of service, and the needs for demonstrating new ideas, while at the same time rehabilitating and treating patients, seemed to be a contradiction which had grown up out of tradition rather than one which was inherent in the situation. We felt that if we could develop a new problem-solving tradition, these contradictions would not necessarily have to exist.

Thus, for example, we needed to examine the buildings themselves. Traditionally, space had been organized around specific functions--an office was an office and a laboratory was a laboratory. This often led to vested interests in the space, small self-contained "empires" evolved, and programs would be designed around the needs of these "empires" and around the space and facilities available rather than around the needs of the patients. When space can be conceptualized as serving a variety of purposes for a

variety of disciplines, when an office can be a laboratory and a laboratory a classroom, then these types of "empires" do not evolve as readily and the space can be modified to meet the needs of the patient.

With this in mind, a general approach was evolved which utilized all aspects of the hospital program: research, professional training, demonstration, and service. The principle was established that even the service department was to be considered experimental in some of its activities and that even the research department did provide some service through its staff-patient contacts. It was further evolved as an underlying principle of all the hospital activities that there would be a pattern where the research department would carry out the more basic research activities, that their findings would be tested and applied through the staff and students in the professional training and demonstration department, and that the final results of the applied research would then be utilized by the service areas to achieve solutions to their rehabilitation problems. Thus, all members of the hospital staff, regardless of their discipline or assignment, became part of the rehabilitation team.

Further, our investigations indicated that one of the major bottlenecks in the movement of the mentally retarded individual between the hospital and the community was in the area of services and facilities for the moderately retarded or level III individual. Here, two major factors became apparent. First, there was an overwhelming lack of community resources for this level person, and, second, that because of the historical emphasis on IQ, there was a tendency to assume that this level individual was untrainable and should be considered a permanently institutionalized person. These myths have continued in spite of the historical fact that

most residential institutions drew the greatest percentage of their patient workers from this category. The problem seems to center around the lack of coping or adjustment skills on one hand, and community understanding on the other. In response to the former, the physical facilities and new programs were planned around the general concept that the patient's level of Adaptive Behavior could be modified or reversed. He was to be brought into a treatment and training program designed to enhance his ability to cope and to provide for the modification of those behaviors that were keeping him away from the community. These programs also required a different type of planning in terms of treatment facilities, e.g., two different types of play therapy rooms were built for different types of play therapy in lieu of the usual single type of room; a variety of training areas designed specifically for behavior modification training were evolved; observation and listening areas were built adjacent to all treatment and training areas.

In order to improve the community's understanding of the needs at this level, demonstration sheltered workshops, leisure time programs, prevocational training areas, etc., were expanded and modified to provide more clear-cut information to communities wishing to initiate similar programs, and a sheltered workshop was sponsored in the local community to help demonstrate the feasibility of this type of programing in a rural area.

The fourth objective was to determine the most effective means of coordinating these functions to produce the optimum use of the facilities and staff while minimizing the interference and conflicts of interest between these special rehabilitation programs, the more standard service programs of the hospital, the professional training programs, and the research programs. The need for this type of coordination led to the

development of facilities in the second phase of the rehabilitation center planning which would provide maximum interaction between all the various areas of the hospital and maximum centralized coordination with, at the same time, minimum interference into the actual research and demonstration activities of the individual specialist. This was accomplished through the creation of the positions of Coordinator of Research and Coordinator of Professional Training, Education, and Demonstration. These two individuals, working with the Superintendent and the Clinical Director, are able to provide continuity of programing throughout the whole hospital and an integrated program between the hospital and its university affiliations. This coordination plan grew out of investigations, made possible through this grant, which revealed that many institutions that had embarked on similar types of programs and endeavors had found either that they could not complete their obligations under their grants as they had promised or that the research or demonstration programs tended to divide rather than unify the services. Usually, the hospital and the patients therein suffered from this division. The coordination plan we have developed makes it possible for each new program to be fitted into the overall plan without any one area becoming dominant.

There were special facilities designed into the second phase of the rehabilitation center to make this coordination process easier. All the buildings are equipped with closed-circuit TV jacks to provide interaction whenever needed; the provisions for working space were kept on an open, unstructured basis so that temporary partitions could be inserted or removed as the needs for different professionals changed; adequate space provisions were established for use by students, interns, consultants,

etc.; a bulletin, Project News, was started to keep all involved persons informed about the flow of activities and the latest research findings; a project coordination area was built in the basement of one of the units so that the coordinator could be central to the major aspects of the operation.

SUMMARY AND CONCLUSIONS

The experience the Parsons State Hospital and Training Center has had with this type of grant demonstrates the overall value of support in this area. We would say that this investigation has permitted us to examine a number of ways of approaching problems without having to make what otherwise would be expensive false starts. This is particularly true in relationship to building plans on one hand, and the television and audio-visual programs on the other. The investigation supported by this grant led us to the conclusion that undifferentiated space was extremely important in a research and professional training program, and our subsequent experience with this program has verified this conclusion. In the TV area, the grant permitted us to make the kinds of analyses required to properly set up equipment and programing in a subject area about which none of us previously were very well informed. This could have led to a series of very costly mistakes, but we were able to avoid most of these by the program investigations permitted by this grant.

To repeat, we can best summarize the results by underlining five major findings: First, the development of new facilities and materials should be flexible, and, wherever possible, program planning should be included in architectural discussions so that expensive, later modifications can be avoided. Second, residential institutions should assume a major professional training responsibility, and physical facilities should be

designed with the concept of a "teaching hospital" in mind. Third, all equipment and materials planned for program development and expansion should be acquired on an experimental basis, with major emphasis on such technical aids as closed-circuit television and other audio-visual facilities. Fourth, hospital design must be based on changing community needs, and programs should be planned in terms of community interaction and transition. Fifth, the service, research, professional training and demonstration areas of a complex rehabilitation facility must be permitted to overlap and flow in and out of each other in a coordinated way to produce a unified, multi-disciplinary push on the problems to be solved.

We would recommend, then, that these types of grants be continued to be awarded, particularly to investigate the role of disciplines outside of the traditional mental health service areas. Many of these disciplines have a very appropriate place in the organization of rehabilitation programs, but individuals administering these programs are often totally unacquainted with both the needs of those disciplines and the service they might perform and, thus, are not always in the best position to set up the programs. Furthermore, it has become very apparent that building plans must be oriented with an eye to the future, and that no such plans should be undertaken without thorough consultations with clinic, research, and training personnel who will be using the new buildings.